AF1621
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Re: Appeal to the Board of Patent Appeals and Interferences

In re PATENT Application of
Berscheid, et. al.

Group Art Unit: 1621

Application No. 08/860,007

Examiner: Shippen

Filed: August 4, 1997

For: BIOCIDAL ALCOHOLS, THEIR PRODUCTION AND THEIR USE

Commissioner for Patents
P.O. Box 1045
Alexandria, VA 22313-1450

August 3, 2004

Sir:

1 ☐ **NOTICE OF APPEAL**: Applicant hereby appeals to the Board of Patent Appeals and Interferences from the decision (not Advisory Action) dated

2 ☒ **BRIEF** on appeal in this application attached in triplicate.

3 ☐ An **ORAL HEARING** is respectfully requested under Rule 194 (due two months after Examiner's Answer – unextendable).

4 ☐ Reply Brief is attached in triplicate (due two months after Examiner's Answer – unextendable).

5 ☐ "Small entity" verified statement filed: ☐ herewith. ☐ previously.

6 **FEE CALCULATION**:		Large/Small Entity	
If box 1 above is X'd, see box 12 below first and decide: . . . . . enter		$165	$ 165
If box 2 above is X'd, see box 12 below first and decide: . . . . . enter		$	$
If box 3 above is X'd, see box 12 below first and decide: . . . . . enter		$	$
If box 4 above is X'd, ... enter nothing		- 0 - (no fee)	
7. Original due date: August 10, 2004			
8. **Petition is hereby made** to extend the original due date to cover the date this response is filed for which the requisite fee is attached	(1 months) $0 (2 months) $ (3 months) $ (4 months) $ (5 months) $	0	
9. Enter any previous extension fee paid [ ] previously since above original due date (item 7); [ ] with concurrently filed amendment		-	
10. **Subtract line 9 from line 8 and enter: Total Extension Fee**			+0
11. **TOTAL FEE ATTACHED =**			**$0**

12. ☒ *Fee NOT required if/since paid in prior appeal in which the Board of Patent Appeals and Interferences did not render a decision on the merits.

CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (missing or insufficient fee only) now or hereafter relative to this application and the resulting Official document under Rule 20, or credit any overpayment, to our Account/Order Nos. 50-0687/ for which purpose a duplicate copy of this sheet is attached. **This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal form is filed.**

Manelli Denison & Selter, PLLC

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT Application of
Berscheid, et. al.

Group Art Unit: 1621

Application Serial No. 08/860,007

Examiner: Shippen

Filed: August 4, 1997

For: BIOCIDAL ALCOHOLS, THEIR PRODUCTION AND THEIR USE

* * * * *

August 3, 2004

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from the final rejection of claims 8, 13, 14, 16-18, 21-26 and 33-35 of the subject application.

This Appeal Brief is submitted in triplicate as required by 37 C.F.R. § 1.192 (a).

1. Real Party in Interest:

This application is assigned to Dr. Ralf Berscheid.

2. Related Appeals and Interferences:

There are no other appeals or interferences known to Appellant, the Appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

3. Status of Claims:

Claims 8, 13, 14, 16-26 and 28-47 are pending in this application. Claims 19, 20, 28-32 and 36-47 stand withdrawn from consideration pursuant to a Restriction Requirement.

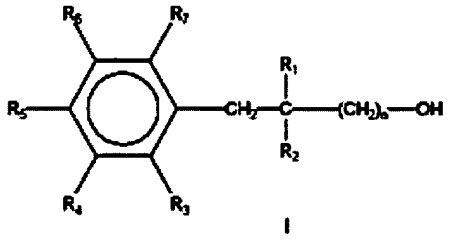
The rejection of claims 8, 13, 14, 16-18, 21-26 and 33-35 is appealed. Please see the Appendix for a copy of the claims under appeal.

4. Status of any Amendment Filed Subsequent to Final Rejection:

No amendment of the claims was made after Final Office Action. A Notice of Appeal was filed on June 10, 2004, along with the appropriate petition for two month's extension and fee.

5. Concise Explanation of the Invention:

Independent claim 13 provides a compound according to formula I,



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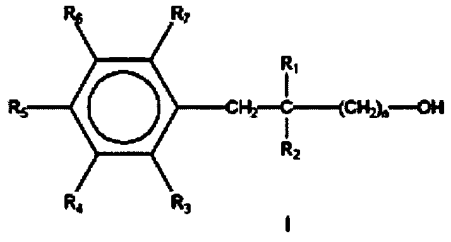
wherein R_1, R_3, R_5, R_6, and R_7 are hydrogen; R_2 is an ethyl group; R_4 is chlorine; and n is 1 or 2. Basis for this claim can be found in the present specification including at page 13, lines 5-6 and original claim 5.

Independent claim 14 recites a disinfectant, antiseptic, antimycotic, deodorant or preservative comprising a compound selected from alcohols, surfactants and solvents; and at least one compound according to formula I:



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wherein,

R_1 is hydrogen or is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl;

R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1 or 2,

with the proviso, that

i) when R_1 and all groups R_3 through R_7 are hydrogen, then

n = 2;

ii) when R_1 and R_2 are C_1-C_6 alkyl and

a) all groups R_3 to R_7 are hydrogen, or

b) R_5 is methyl, methoxy or chloride, and all other groups R_3, R_4, R_6 and R_7 are hydrogen,

then n =2;

iii) when R_1, R_2 and R_4 are methyl and all groups R_3 and R_5 through R_7 are hydrogen, then n =2;

iv) when R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n = 2;

v) when R_1, R_3, R_6 and R_7 are hydrogen, R_2 is methyl, and R_4 and/or R_5 are hydrogen or C_1-C_6 alkyl, then n = 2;

vi) when R_1 and R_4 through R_7 are hydrogen, R_2 is methyl or ethyl, and R_3 is methyl or methoxy, then n = 2;

vii) when R_1, R_3, R_5 and R_7 are hydrogen, R_2 is methyl, R_4 and R_6 are methyl

or R_4 is hydrogen and R_6 is methyl, then n = 2; and

viii) when R_1 is hydrogen, R_2 is butyl, R_3 and R_5 are chloride, and all other groups R_4, R_6 and R_7 are hydrogen, then n = 2.

Dependent claim 8 recites a composition according to claim 14 which contains

(a) 0.01 to 10% by wt. of a compound of formula I, and

(b) 0.1 to 90% by wt. of a compound selected from C_1-C_6 alkyl alcohols, unsubstituted or substituted with a C_6-C_{12} aryl, aralkyl or aryloxy group, anionic cationic, amphoteric or nonionic surfactants, dimethylforom-amide, betaines and glycerine. Basis for this claim can be found in the present specification including at page 1, first paragraph and page 3, line 5 to page 4, line 13.

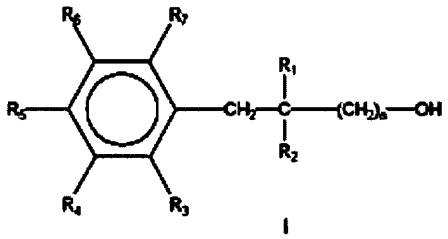
Dependent claims 16-18 recite compositions according to claim 14, wherein said compound according to formula I is present in an amount of about 0.01 to about 10% by weight (claim 16), about 0.05 to about 8% by weight (claim 17), or about 0.1 to about 5% by weight (claim 18). Basis for these claims can be found in the present specification including at page 6, lines 5-6.

Dependent claim 33 recites a disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein R_3 and R_5 to R_7 are hydrogen, R_4 is chlorine, R_1 is hydrogen, R_2 is ethyl and n is 1. Basis for this claim can be found in the present specification including at compound No. 6 on page 14 of the specification.

Dependent claim 34 recites a disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein R_4 to R_7 are hydrogen, R_3 is chlorine, R_1 is hydrogen, R_2 is ethyl and n is 1. Basis for this claim can be found in the present specification including at compound No. 9 on page 14 of the specification.

Dependent claim 35 recites a disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein R_3, R_4, R_6 and R_7 are hydrogen, R_5 is chlorine, R_1 is hydrogen, R_2 is ethyl and n is 1. Basis for this claim can be found in the present specification including at compound No. 10 on page 15 of the specification.

Independent claim 21 provides a shampoo or shower gel containing a preservative comprising a compound selected from alcohols, surfactants and solvents; a re-fatting agent; and a compound according to formula I:



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wherein,

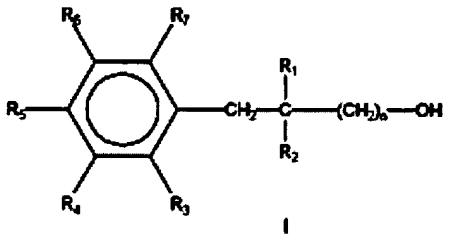
R_1 is hydrogen or is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl;

R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1 or 2, with the proviso that when R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n = 2.

Basis for this claim can be found in the present specification including at page 1, first paragraph, page 3, line 5 to page 4, line 13, page 24, line 26 and page 25, lines 31-32.

Independent claim 22 recites a method of disinfecting a surface comprising the step of applying a disinfectant to said surface, said disinfectant comprising a compound selected from alcohols, surfactants and solvents; and a compound according to formula I:



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wherein,

R_1 is hydrogen or is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl;

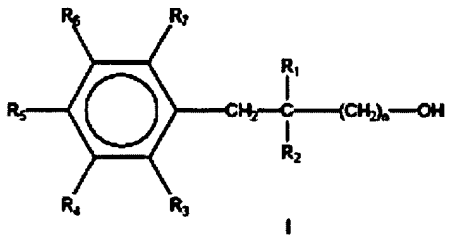
R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1 or 2, with the proviso that when R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n = 2.

Basis for this claim can be found in the present specification including at page 1, first paragraph, page 3, line 5 to page 4, line 13, and pages 26-30.

Dependent claim 23 recites a method according to claim 22, wherein said surface is skin, a mucous membrane, or a surgical glove. Basis for this claim can be found in the present specification including at pages 26-30 and original claim 12.

Independent claim 24 recites a method of deodorizing a surface comprising the step of applying a disinfectant to said surface, said deodorant comprising a compound selected from alcohols, surfactants and solvents; and a compound according to formula I:



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wherein,

R_1 is hydrogen or is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl;

R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

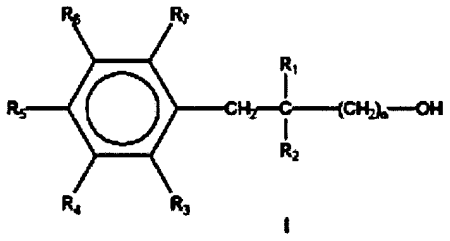
each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1 or 2, with the proviso that when

R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n = 2.

Basis for this claim can be found in the present specification including at pages 23 and 24 and original claim 12.

Dependent claim 25 recites a method according to claim 24, wherein said surface is skin. Basis for this claim can be found in the present specification including at pages 23 and 24 and original claim 12.

Independent claim 26 provides a process for the production of a compound of formula I:



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wherein,

R_1 is hydrogen;

R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1;

said process comprising the steps of:

a) monoalkylating a malonic acid dialkyl ester to introduce the group R_2;

b) dialkylating the monoalkylated malonic acid alkyl ester with a benzyl halide optionally substituted at the aromatic ring to introduce the groups R_3 through R_7 which are other than hydrogen;

c) saponifying and decarboxylating the dialkylated malonic acid dialkyl ester to form a corresponding 3-aryl-substituted propionic acid, and

d) reducing the 3-aryl-substituted propionic acid to form a desired alcohol of formula I.

Basis for this claim can be found in the present specification including at page 1, first paragraph, page 3, line 5 to page 4, line 13, and page 9, lines 9-25.

6. Issues

I. Whether claims 8, 14, 16-18 and 21-25 are patentable under 35 U.S.C. § 103 over U.S. Patent No. 4,110,430 (Hopp).

II. Whether claims 8, 13, 14, 16-18, 21-25 and 33-35 are patentable under 35 U.S.C. § 103 over U.S. Patent 4,321,257 (Sipos).

III. Whether claim 26 is patentable under 35 U.S.C. § 103 over U.S. Patent 4,968,668 (Hafner) in view of Vogel, "A Textbook of Practical Organic Chemistry").

7. Grouping of Claims:

With regard to the obviousness rejection based on Hopp, claims 8, 14, 16-18 and 21-25 stand or fall together.

With regard to the obviousness rejection based on Sipos, claims 8, 14, 16-18 and 21-25 stand or fall together. Each of claims 13 and 33-35 do not stand or fall with any other claim.

Claim 26 does not stand or fall with any other claim.

8. Arguments

The Prior Art Rejections Should be Withdrawn for Non-compliance with MPEP § 706.04.

MPEP § 706.04 provides that "[g]reat care should be exercised in authorizing ... a rejection [of a previously allowed claim]." "Full faith and credit should be given to the search and action of the previous Examiner unless there is a clear error in the previous action or knowledge of other prior art. In general, an examiner should not take an entirely new approach or attempt to reorient the point of view of a previous Examiner, or make a new search in the mere hope of finding something."

The original Examiner indicated that the present claims were allowable over the same prior art now cited by new Examiner Shippen. Appellants made substantial claim amendments in reliance of that indication of allowability. New Examiner Shippen has not shown there was a clear error in the previous examination nor has he cited new closer prior art. For these reasons alone, the present application should be allowed to issue.

In paragraph 14, on page 7 of the first Office Action dated October 3, 1997, Examiner Puttlitz stated that the subject matter of claims 9 and 10 was allowable. Original claim 5 was not rejected over prior art and present independent claim 13 recites the subject matter of original claim 5. Present independent claim 14 recites the subject matter of previously allowable claim 9. Present claim 15 recites the subject matter of previously allowable claim 10. All of the independent claims of record include subject matter that was held to be patentable over the prior art cited by original Examiner Puttlitz.

Examiner Puttlitz conducted a prior art search as shown by the references listed on the form PTO-892 accompanying the October 3, 1997 Office Action. Examiner

Puttlitz rejected original claims 1, 2, 4, 6-8 and 12 under 35 U.S.C. 102 and 103 over three patents without resorting to very rarely used doctrine of structural similarity. Appellants agreed to cancel the rejected subject matter in consideration for allowance of the allowable subject matter in claims 5, 9 and 10.

New Examiner Shippen has improperly withdrawn the allowability of claims 9 and 10 and rejected the subject matter of allowed claims 9 and 10 and claim 5 under the guise of newly found prior art. However, the alleged newly found prior art is farther removed from the claimed invention than the references cited by the original Examiner Puttlitz. Furthermore, Examiner Puttlitz already considered this supposed new prior art. U.S. patent No. 4,110,430 (Hopp) was cited in the International Search Report of the parent PCT application and considered by Examiner Puttlitz on September 28, 1997. See Information Disclosure Statement initialed by Examiner Puttlitz and mailed with the October 3, 1997 Office Action. Thus, Examiner Puttlitz already considered Hopp and found original claims 9, 10 and 5 allowable over Hopp. Full faith and credit should have been given to this allowance.

New Examiner Shippen admits that the new prior art does **not** disclose the claimed compounds. The new Examiner relies on the very rarely used doctrine of "structural similarity" to reject the claimed invention over the cited references, which doctrine is now outdated and disproven, as discussed below.

New Examiner Shippen has improperly taken an entirely new approach to reorient the point of view of previous Examiner Puttlitz. As discussed more fully below, the new Examiner improperly stretches the teachings in the alleged new prior art and relies on the very weak doctrine of "structural similarity". The new search and new approach of Hopp do not comply with the requirements of MPEP § 706.04, and therefore the prior art rejections of record should be withdrawn for this reason alone.

Appellants have deleted claim 26 in response to the questions raised by the Board of Appeals in its January 29, 2003 decision and deleted claims in response to proper prior art rejections raised by Examiner Puttlitz in his October 3, 1997 Office Action. In each case the U.S. Patent Office has raised legitimate patentability concerns, Appellants have agreed to amend their claims. It is simply unfair to have

Appellants amend their claims with the promise of allowance by Examiner Puttlitz and then have new Examiner Shippen rip the rug out from under them by presenting new baseless rejections, especially based on prior art already considered by Examiner Puttlitz. On page 6 of the Office Action, Examiner Shippen attempts to rationalize his position by arguing that:

> It is noted that the rejections criticized by Applicants were made after Applicants amended their claims. First, such an amendment in of itself would normally necessitate further search of the amended claims. Second, when the present examiner was assigned to the instant application to be examined, there were no search notes present in the file wrapper. As such there was in fact no search to give full faith and credit to. Applicants should further note that, the instant examiner is a primary examiner and as such the rejections have been approved by the primary examiner in accordance with the procedure set forth in MPEP 706.04. Furthermore, Applicant's argument ignores fundamental principles of patent law. The fact that a claim has been indicated allowed is simply immaterial as to the validity of the rejection. This is a question of procedure and not substance.

Appellants find it shocking that deletion of rejected claims and amendment of allowable claims to be in independent form "would normally necessitate further search." In Appellants' March 19, 1998 Amendment, all claims were amended to contain allowable subject matter. The new Examiner has not pointed out any new claims not containing allowable subject matter that required a new search or new rejection, nor can he. Appellants fail to see any distinction between allowable independent claims that do not require amendment and allowable dependent claims that have been amended to be in independent form. Normal U.S. Patent Office procedure is to grant issuance on allowable subject matter, not pursue endless prosecution.

The new Examiner is simply wrong that no search was conducted by Examiner Puttlitz. As shown by the Form PTO-892 accompanying the October 3, 1997 Office Action, Examiner Puttlitz conducted a search and found U.S. patent Nos. 4,118,461 and 4,472,412 and the article by Manabe, which were not provided by Appellants. Thus, by new Examiner Shippen's own admission "that there was no search to give full faith and credit to," the Examiner and this Board should give full faith and credit to Examiner Puttlitz's original search and action. Furthermore, the fact that Examiner Puttlitz already

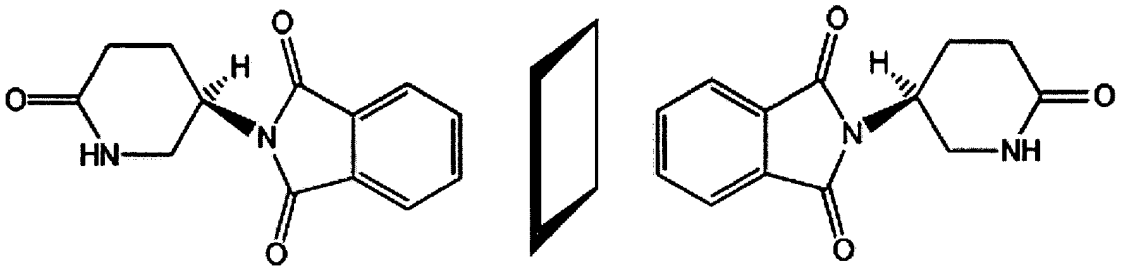
considered Hopp and found the present claims allowable thereover lends further credence that full faith and credit should be provided to the original allowability of the present claims.

New Examiner's Shippen's statement that he is a primary Examiner and therefore the procedure in MPEP 706.04 was followed is self serving. As clearly stated by Examiner Shippen, "there was in fact no search to give full faith and credit to." Since new Examiner Shippen is mistaken and a search was conducted, by definition he could not have followed MPEP 706.04. Furthermore, as stated above, Examiner Puttlitz cited prior art under Section 102 and 103 without resort to rarely used doctrines that are not substitutes for a *prima facie* case and he already considered Hopp. Even if no independent search was conducted by Examiner Puttlitz, full faith and credit should have been given to his actions. In contrast, new Examiner Shippen now cites far removed references relying on structural similarity as a substitute for a *prima facie* case. If new Examiner Shippen would have found and cited new closer prior art than that cited by Examiner Puttlitz, or even close prior art that did not require resort to mere "structural similarity," Appellants would not have raised this objection to withdrawing the allowability of the pending claims.

Today these doctrines of structural similarity are no longer valid as demonstrated by many articles coming out of the area of "Supramolecular Chemistry". This discipline became a well accepted part of Chemical doctrines and the Nobel Prize for Chemistry 1987 was awarded to Donald James Cram (USA), Jean-Marie Lehn (FR) and Charles JohnPedersen (USA) for their development and use of molecules with structure-specific interactions of high selectivity i.e., molecules that can "recognize" each other and choose which other molecules they will form complexes with. The fundamental findings have been that interactions are dominated by structure and topology and **not** by structural similarity due to simply isomers or homologs of a given compound.

Famous examples of compounds which have a different biological activity but the same number of atoms only different by stereoisomerism (left hand vs. right hand shape) are for example 1) L(+) lactic acid (yoghurt; active) vs. R(-) lactic acid (not active), 2) Contergan-Affair (1958-61): Thalidomide, the active ingredient of Contergan,

is a chiral phthalimidoglutarimide ((±)-N-(2,6-Dioxo-3-piperidinyl)-1H-isoindole-1,3(2H)-dione), which was used as a racemic mixture of (R)-thalomide and (S)-thalomide as a sedative and hypnotic drug. It has been developed later that only the (R)-enantiomer is responsible for the sedative activity of Contergan, and only the (S)-enantiomer is responsible for the teratogene activity which causes the well-known heavy malformations of feti.



R-Thalomide (sedative)

S-Thalomide (teratogene: creates malformation of embryones)

3) 11-cis-retinal play a major role within the process of weak light perception of our eyes. Retinal is part of rhodopsine and is activated by a light signal from the 11-trans-retinal to the 11-cis-retinal on an higher energy level (photo-isomerization). The molecule is acting like a hinge and tries to get back to the lower energy level in the tension-free trans form. This leads to an energy transfer and a neuronal signal of "light". The light reception mechanism is exclusively known as starting from the trans-shaped retinal and leads to a short temporarely "blindness" if all molecules are in the cis-shape and no 11-trans-retinal is available as e.g. due to a light flash which is directed in our eyes. All the three examples mentioned before show that there are dominating steric effects over simple homolog or isomeric effects.

In 1996 the team of Robert Floyd Curl (USA), Sir Harold Walter Kroto (UK) and Richard Smalley (USA) have been awarded with the Nobel Price for Chemistry for the

discovery of fullerenes, also called "buckyballs" as a new form of Carbon with ball-shaped molecules. The homologous flat molecules with the same number of carbon do not have the same properties as the ball-shaped molecules due to the different shape. These are famous examples that structure can dominate over isomeric effects. There are numerous examples that homologues and isomers do **not** have similar properties.

For these many reasons, new Examiner Shippen has not followed the requirements of MPEP 706.04 and all rejections of record should be withdrawn and the pending claims allowed to issue.

New Examiner Shippen not only ignores MPEP 706.04 but also fails to follow MPEP 706.02. In its January 29, 2003 Decision, the Board reprimanded Examiner Shippen for not making a proper rejection under Section 103 and suggested that he review MPEP 706.02(j) for a model of how to explain a rejection under this section of the statutes. Appellants submit that Examiner Shippen still fails to make a proper rejection under Section 103 for the many reasons provided below.

I. Claims 8, 14, 16-18 and 21-25 are patentable under 35 U.S.C. § 103 over U.S. Patent No. 4,110,430 (Hopp).

In the final Office Action, the Examiner rejected claims 8, 14, 16-18 and 21-25 under 35 U.S.C. § 103 over Hopp. The Examiner incorporates his April 24, 2003 rejection in the final Office Action. Thus, Appellants will respond to both the final and April 23, 2003 Office Actions.

Appellants respectfully submit that the Examiner has not provided a *prima facie* case of obviousness and even if a *prima facie* case has been provided, the claimed invention is not obvious from Hopp for the following reasons.

The Examiner states on page 6 of the April 24, 2003 Office Action that "[a]s has been indicated in the Examiner's Answer, Hopp teaches the claimed compositions and use thereof using active agents of formula I." This simply is not true. The Examiner even admits as much by stating on page 8 of that Office Action that "the prior art [Hopp] active agent differs from what is claimed by only as to the position of the alkyl group on the benzene ring or in a homologous manner." The Examiner also states on Thus,

the Examiner openly admits that there are differences between Hopp and the claimed invention.

The Examiner argues that the claims recite isomers or homologs of the compounds disclosed in Hopp and differ only by the placement of the alkyl on the benzene ring. By use of the term "isomers" it is believed that the Examiner is referring to "position isomers" which are defined by MPEP 2144.09 as "compounds having the same radicals in physically different positions on the same nucleus." Homologs are defined by MPEP 2144.09 as "compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH_2- groups."

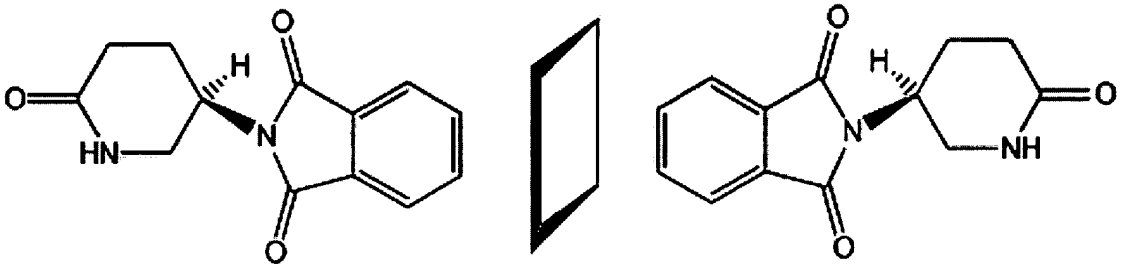
Hopp does **not** disclose the use of alkyls substituted on the benzene ring, but rather only the use of **isopropyl** or **tert-butyl**. See column 1, line 39 of Hopp. Thus, the only compounds recited in the claims of the subject application that can be a "position isomer " of the compounds disclosed in Hopp are those in which only one of R_3, R_4, R_6 and R_7 is isopropyl or tert-butyl, the remaining groups R_3 through R_7 and R_1 are hydrogen, R_2 is methyl, and n is 1. Furthermore, the only compounds recited in the claims of the subject application which can be a "homolog" of the compounds disclosed in Hopp are those in which R_5 is isopropyl or tert-butyl, all of R_3, R_4, R_6 and R_7 are hydrogen, R_2 is methyl, and n is 2. All other compounds recited in the claimed invention cannot be a position isomer or homolog of the compounds disclosed in Hopp.

Homology and isomerism are **not** substitutes for a *prima facie* case of obviousness and they are only a relevant fact in the determination of obviousness. See *In re Mills*, 126 USPQ 513, 516 (CCPA 1960); *In re Langer and Haynes*, 175 USPQ 169, 171 (CCPA 1972); and *In re May and Eddy*, 197 USPQ 601, 607 (CCPA 1978). See also MPEP 2144.09, which states that "[h]omology should be automatically equated with *prima facie* obviousness because the claimed invention and the prior art must each be viewed 'as a whole.'"

Furthermore, today these doctrines of structural similarity are not valid anymore as demonstrated by many articles coming out of the area of "Supramolecular Chemistry". This discipline became a well accepted part of Chemical doctrines and the Nobel Prize for Chemistry 1987 was awarded to Donald James Cram (USA), Jean-

Marie Lehn (FR) and Charles JohnPedersen (USA) for their development and use of molecules with structure-specific interactions of high selectivity i.e., molecules that can "recognize" each other and choose which other molecules they will form complexes with. The fundamental findings have been that interactions are dominated by structure and topology and **not** by structural similarity due to simply isomers or homologs of a given compound.

Famous examples of compounds which have a different biological activity but the same number of atoms only different by stereoisomerism (left hand vs. right hand shape) are for example 1) L(+) lactic acid (yoghurt; active) vs. R(-) lactic acid (not active), 2) Contergan-Affair (1958-61): Thalidomide, the active ingredient of Contergan, is a chiral phthalimidoglutarimide ((±)-N-(2,6-Dioxo-3-piperidinyl)-1H-isoindole-1,3(2H)-dione), which was used as a racemic mixture of (R)-thalomide and (S)-thalomide as a sedative and hypnotic drug. It has been developed later that only the (R)-enantiomer is responsible for the sedative activity of Contergan, and only the (S)-enantiomer is responsible for the teratogene activity which causes the well-known heavy malformations of feti.



R-Thalomide (sedative)

S-Thalomide (teratogene: creates malformation of embryones)

3) 11-cis-retinal play a major role within the process of weak light perception of our eyes. Retinal is part of rhodopsine and is activated by a light signal from the 11-trans-

retinal to the 11-cis-retinal on an higher energy level (photo-isomerization). The molecule is acting like a hinge and tries to get back to the lower energy level in the tension-free trans form. This leads to an energy transfer and a neuronal signal of "light". The light reception mechanism is exclusively known as starting from the trans-shaped retinal and leads to a short temporarely "blindness" if all molecules are in the cis-shape and no 11-trans-retinal is available as e.g. due to a light flash which is directed in our eyes. All the three examples mentioned before show that there are dominating steric effects over simple homolog or isomeric effects.

In 1996 the team of Robert Floyd Curl (USA), Sir Harold Walter Kroto (UK) and Richard Smalley (USA) have been awarded with the Nobel Price for Chemistry for the discovery of fullerenes, also called "buckyballs" as a new form of Carbon with ball-shaped molecules. The homologous flat molecules with the same number of carbon do not have the same properties as the ball-shaped molecules due to the different shape. These are famous examples that structure can dominate over isomeric effects. There are numerous examples that homologues and isomers do **not** have similar properties.

Even if the Examiner has provided a *prima facie* case, the experimental evidence of record rebuts any such *prima facie* case of obviousness. Claims 8, 14, 16-18 and 21-25 recite novel compounds and compositions which are not disclosed in Hopp. The experimental evidence disclosed in the present specification demonstrates the unexpected advantages of the claimed compounds compared to those disclosed in Hopp. Hopp only discloses that their compounds have a microbicide effect on staphyloccocus epidermis and aureus, and candida albicans. In contrast, the claimed compounds and compositions exhibit an unexpected microbicide effect against e-coli (Tables on pages 19, 21, 25, and 27 of the present application), as well as unexpected **anti-fungal properties** (Tables on pages 23 and 24 of the present application). Hopp does <u>not</u> teach or suggest that the claimed compounds have anti-fungal properties or microbicide properties against e-coli and therefore cannot make obvious the compounds and compositions recited in claims 8, 14, 16-18 and 21-25.

In the final Office Action, the Examiner simply ignores this extensive experimental evidence and merely states that "[i]t is unclear what evidence in the

specification Appellants are relying upon and they do not point to any specific evidence," then goes onto to merely conclude that since no direct comparison was made the evidence is insufficient. Appellants point out that Hopp does not disclose how to make an anti-fungal agent or microbicide against e-coli and, thus, no direct comparison is required.

Furthermore, Appellants respectfully traverse the Examiner's argument that the 'rule' that 'compounds of a homologous series are recognized as possessing a community of properties in common' is accurate. It is known that there is an +I effect (inductive) for aliphats which can give impact in all positions of the benzene ring, but they are superimposed by +/- M (mesomeric) effects, which are active in *o*- and *p*-positions of the benzene ring (for example Cl group with +M and –I effect and C≡N group with –M, -I effect). The theory of +/- I effects and +/- M effects may be known, however, this theory cannot be used to ignore experiments that have uncovered unexpected *activity* of a compound.

In the present application, unexpectedly, the lipophily and topology plays a major role for the biocidal activity of the presently claimed formula **I** (see Rule 132 Declaration of record), even more than homologue, isomeric or electronic (+/- I, +/- M) effects.

The Examiner even admits that one of ordinary skill in the art would expect that the claimed compositions have different properties compared to the compounds disclosed in Hopp. See page 15 of the April 24, 2003 Office Action:

> It is further noted, that the assertion of one expecting similar properties in view of the close structural similarity of the instant active agents to those of the prior art is not an assertion of identical properties but rather similar properties. After all the agents are not identical in every respect and one would not expect identical properties.

Appellants submit that the Examiner is improperly relying on the novel properties of the presently claimed compositions disclosed in the present application for the basis of his Section 103 rejection. The different properties of the present invention, such as anti-fungal properties, are not expected from the Hopp active agents and the Examiner has provided no evidence to the contrary. For these reasons alone, the Section 103 rejection should be withdrawn.

Appellants respectfully submit that the Examiner's allegations that one of ordinary skill in the art would be motivated to make the claimed compounds is based on unfounded assumptions. The Examiner's reliance on *In re Shetty*, 195 USPQ 753; *In re Lintner*, 173 USPQ 560; and *In re Hoch*, 166 USPQ 406, to support a *prima facie* case of obviousness and to find obviousness is without merit for the following reasons.

Shetty stated that homologs may give rise to a *prima facie* case of obviousness since the Appellant did not provide counter arguments. *Shetty*, p 756, held that since the Appellant did not provide any experimental evidence showing actual differences in properties the homologs were obvious, relying on *Hoch*. In contrast to the facts in *Shetty*, present Appellants have demonstrated that the properties of the claimed compounds are actually different and unexpected compared to the properties of the Hopp active agents, as discussed above.

Lintner relates to a laundry composition in which the invention differed from the prior art composition by the reason for the addition of sugar. The prior art disclosed the use of sugar. The court found the presence of sugar for a different reason was not patentable. The court in *Lintner*, at p. 562, stated that:

> "In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification."

The Examiner has not demonstrated how the references teach or provide a suggestion to one of ordinary skill in the art to modify the compounds of Hopp to arrive at the claimed compounds, nor the claimed compositions containing the compounds. Unlike the facts in *Lintner,* the presently claimed compounds and compositions are <u>not</u> disclosed in Hopp, whereas the sugar in *Lintner* was disclosed in the prior art references. Thus, the Examiner's finding of obviousness based on *Lintner* is without merit and should be withdrawn.

Hoch, p. 409, held that a *prima facie* case was not overcome because the Appellants did not show how the reference compounds and claimed compounds actually differ in properties. In contrast, in the present Appeal the Appellants have

demonstrated that the properties of the claimed compounds and compositions are actually different than those of Hopp, as discussed above. Thus, *Hoch* does not support the Examiner's conclusion that the claimed invention is obvious over Hopp.

Appellants point out that the corresponding European Patent Application (EP1995-942717, including German P4447361.3), Argentina patent No. AR002253B1 and South Africa patent No. ZA1995-10889 were all allowed over Hopp.

For all of the reasons advanced above, the Appellants submit that the claimed invention is not obvious over Hopp and therefore withdrawal of the Section 103 rejection is respectfully requested.

II. Claims 8, 13, 14, 16-18, 21-25 and 33-35 are patentable under 35 U.S.C. § 103 over U.S. Patent 4,321,257 (Sipos).

In the final Office Action, the Examiner rejected claims 8, 13, 14, 16-18, 21-25 and 33-35 under 35 U.S.C. § 103 over U.S. Patent 4,321,257 (Sipos). The Examiner incorporates his April 24, 2003 rejection in the final Office Action. Thus, Appellants will respond to both the final and April 23, 2003 Office Actions.

The claimed invention is not taught or suggested by Sipos for the following reasons. The Examiner admits that Sipos does not disclose the claimed compounds. See page 15 of the Office Action. The Examiner then argues that the group III phenol alkanols disclosed in Sipos generically teach the claimed compounds and that "[i]t is well within the skill of the artisan to select among the alternatives of the reference to afford compounds possessing the prior art use." As discussed fully above, the doctrines of structural similarity have recently been disproven. For these reasons alone, the Examiner has not provided a *prima facie* case of obviousness and the rejections of record should be withdrawn.

Even if the Examiner has made a *prima facie* case of obviousness, the claimed invention is not obvious thereover for the following reasons. Appellants submit that Sipos teaches that the large list of group III phenol alkanols cited by the Examiner are only "potentiators" (column 4, lines 23 and 55). Potentiators are taught as enhancing the activity of an antimicrobial agent, not that the potentiator is an antimicrobial agent

(column 3, lines 15-18). Thus, Sipos does not teach any compounds having the claimed properties such that one can merely select alternatives therefrom as alleged by the Examiner. For this reason alone, the Section 103 rejection should be withdrawn.

In contrast, the presently claimed compounds are antimicrobial agents, disinfectants, deodorants, antimycotics or preservatives, not merely potentiators, as demonstrated by the experimental results disclosed in the Examples of the present specification. Sipos does not teach or suggest that any species in the group III phenol alkanols would have antimicrobial, disinfectant, deodorant, antimycotic or preservative properties and therefore cannot make obvious use of these compounds as an antimicrobial agent, disinfectant, deodorant, antimycotic or preservative.

Appellants respectfully submit that Examiner's allegations that one of ordinary skill in the art would be motivated to make the claimed compounds from reading Sipos is based on unfounded assumptions. The Examiner again improperly relies on *In re Shetty*, 195 USPQ 753; *In re Lintner*, 173 USPQ 560; and *In re Hoch*, 166 USPQ 406, to support a *prima facie* case of obviousness and to find obviousness.

Shetty stated that homologs may give rise to a *prima facie* case of obviousness since the Appellant did not provide counter arguments. *Shetty*, p 756, held that since the Appellant did not provide any experimental evidence showing actual differences in properties the homologs were obvious, relying on *Hoch*. In contrast to the facts in *Shetty*, the present Appellants have demonstrated that the properties of the claimed compounds and compositions containing the compounds are actually different and unexpected compared to properties of the compounds of Sipos. Sipos does not disclose any properties of compounds, which are purported to be similar to the claimed compounds. Furthermore, the claimed compounds are not isomers or homologs of the compounds disclosed in Sipos and therefore *Shetty* does not support the Examiner's conclusion that a *prima facie* case of obviousness has been presented.

Lintner relates to a laundry composition in which the invention differed from the prior art references by the reason for the addition of sugar. The prior art disclosed the use of sugar. The court found the presence of sugar for a different reason was not patentable. The court in *Lintner*, at p. 562, stated that:

> "In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification."

The Examiner has not demonstrated how the references teach or suggest to one of ordinary skill in the art to modify the compounds of Sipos to arrive at the claimed compounds, nor the specifically claimed compositions containing these compounds. Unlike the facts in *Lintner,* the claimed compounds and compositions are not disclosed in Sipos, whereas the sugar in *Lintner* was disclosed in the prior art references. Thus, the Examiner's finding of obviousness based on *Lintner* is without merit and should be withdrawn.

Hoch, p. 409, held that a *prima facie* case was not overcome because the Appellant did not show how the reference compounds and claimed compounds actually differ in properties. In contrast, the present Appellants have demonstrated that the properties of the claimed compounds and compositions are actually different than those of Sipos. Thus, *Hoch* does not support the Examiner's conclusion that the claimed invention is obvious over Sipos.

Appellants submit that the present invention is not obvious and that the 'rule' that 'compounds of a homologous series are recognized as possessing a community of properties in common,' as alleged by the Examiner, is simply not true. Once again, Appellants point out that such doctrines of structural similarity have been disproven, as discussed fully above in reference to Hopp. Thus, Appellants submit that the Examiner has not provided a *prima facie* case of obviousness and the rejections of record should be withdrawn.

Even if the Examiner has provided a *prima facie* case of obviousness, it is not obvious by reading Sipos that the activity of the presently claimed compounds depends on (i) topology instead of homology and (ii) the lipophily of structural parts. The claimed structural types provide unexpectedly high activity. The Rule 132 Declaration of record discloses the MIC values of 11 compounds. There is a conclusive explanation based on topologic arguments and on lipophilic/hydrophilic arguments. The screening results

show that the activity of the biocidal alcohol as claimed for formula **I** can now be explained by a common structure of a lipophilic unit and a hydophilic OH group that is separated by a (rigid) spacer unit of around 3 to 4 carbon atoms within an aliphatic chain, which has a branch on the beta position to the benzene ring.

For example, the strong impact of lipophilic substituents such as CH_3, C_2H_5 or Cl either at the benzene ring or the alcohol CH_2 chain (compounds 4, 5, 6) compared to 3-phenylpropanol (1) **cannot be explained by isomeric or homologue effects**. The dialkyl substitution of the spacer chain has the highest impact on the ß-position of the aliphatic spacer unit, which is not expected from looking at isomeric effects (compare 2 vs. 1 and k).

In "Supramolecular Chemistry" one can find a lot of examples where topology plays a major role over other electronic and homologue effects and especially over isomery, especially for the chemistry of host guest interactivity. This discipline has become a well accepted part of Chemical doctrines and Nobel Prizes have been awarded to that area of Chemistry (e.g. 1987 and 1996; see examples mentioned above). While this is only one literature reference, there are numerous more articles if one searches this sector of chemical investigation (general survey, e.g. F. Vögtle, Supramolecular Chemistry, Wiley & Sons, Chichester 1991).

The translation of R. Berscheid, M. Nieger, F. Vögtle, *Chem. Ber.* **1992**, *125*, 2539-2552, discloses a triply-bridged dye molecule, its synthesis and solvatochromic and halochromic effects to different isomeric structures in table 7 (page 2542). For example 1,2-dimethylbenzene exhibited a significant shift in UV spectra while 1,4-dimethylbenzene does not. This effect is explained by sterical reasons and the topology of the molecule. The 1,2-dimethylbenzene fits to the host structure while the 1,4-isomer does not. This article demonstrates that the simple view of isomers having similar activity is <u>not</u> always true.

The Examiner's statement on page 23 of the April 24, 2003 Office Action "[t]hat is one would expect to obtain additional active agents having the prior art use by such a modification of the prior art" is baseless. The Examiner's circular argument fails for the

simple reason that Sipos does not teach any compounds having any of the claimed properties and, thus, there can be no such additional active agents suggested by Sipos.

For all of the reasons advanced above, Appellants submit that the claimed invention is not obvious over Sipos and therefore withdrawal of the Section 103 rejection is respectfully requested.

III. Claim 26 is patentable under 35 U.S.C. § 103 over U.S. Patent 4,968,668 (Hafner) in view of Vogel, "A Textbook of Practical Organic Chemistry."

In the final Office Action, the Examiner rejected claim 26 under 35 U.S.C. § 103 over U.S. Patent 4,968,668 (Hafner) in view of Vogel, "A Textbook of Practical Organic Chemistry." Appellants submit that claim 26 is not taught or suggested by the theoretical combination of Hafner and Vogel for the following reasons.

The Examiner admits that Hafner does not teach the claimed step (a) and that some of the reactants differ as to the substituents present. The Examiner argues that Vogel teaches the claimed step (a).

There is no motivation in either of the cited references to follow the claimed step (a) to form the specific monoalkylated malonic acid alkyl esters claimed and then follow the claimed steps (b) through (d) to form the specific alcohols presently claimed. Appellants respectfully submit that the Examiner is unfairly relying on hindsight gleaned from the present specification and is improperly using the present specification as a blueprint to piece unrelated teachings from the references together.

The Examiner admits that Hafner uses different reactants and, thus, forms different products than those presently claimed. The Examiner merely argues that the use of a new starting material in an otherwise old process is considered obvious and improperly cites cases as the only basis for the rejection. Appellants point out the claimed invention is both a novel process and novel starting materials, not merely new starting materials in an old process as alleged by the Examiner. As admitted by the Examiner, Hafner does not disclose all of the claimed method steps. Thus, the Examiner's logic fails and the Section 103 rejection should be withdrawn for this reason alone.

Appellants point out *In re Ochiai*, 37 USPQ2d 1127, 1132 (Fed. Cir. 1995), in which the Federal Circuit stated that:

> "Mere citation of *Durden, Albertson* or any other case as a basis for rejecting process claims that differ from the prior art by their use of different starting materials is improper, as it sidesteps the fact-intensive inquiry mandated by Section 103."

The Examiner has provided no motivation or teaching in any of the cited references which would direct one of ordinary skill in the art to ignore the teachings in Hafner and use different reactants (as presently claimed) and then change the process of Hafner and use part of the method disclosed in Vogel.

The Examiner improperly relies on *In re McLaughlin*, 170 USPQ 209 to support a *prima facie* case of obviousness. *McLaughlin* relates to a mechanical invention in which a reference teaching boxcars is combined with a reference teaching a side filler panel. The Examiner is relying on the statement "any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning" to support his *prima facie* case. However, the Examiner must still demonstrate that some teaching in the prior art provides the motivation to combine the teachings. The Federal Circuit stated in *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988) that:

> When prior art references require selective combination . . . to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself . . . Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination.

Appellants submit that the Examiner has not provided any teaching or suggestion in the prior art which provides any motivation to selectively combine unrelated teachings in Hafner and Vogel as stated by the Examiner.

For these reasons, Appellants respectfully submit that the Examiner has not provided sufficient evidence to support a *prima facie* case of obviousness and the Section 103 rejection should be withdrawn for this reason alone.

Even if the references were combined, the theoretical combination of Hafner and Vogel would not make obvious the method recited in claim 26. The theoretical combination of Hafner and Vogel provides a method which makes a different alcohol than those claimed because Hafner teaches the use of different reactants than those in the claimed method.

Furthermore, the claimed invention provides unexpected properties not disclosed in the cited references. As discussed above, the compounds formed by the claimed method exhibit antimicrobial, disinfectant, deodorant, antimycotic or preservative properties. Hafner only discloses that the alcohols disclosed therein provide fragrance properties. Vogel also does not teach or suggest a method of forming compounds that are suitable for use as antimicrobial, disinfectant, deodorant, antimycotic or preservative agents.

For these reasons, the claimed method is not taught or suggested by the theoretical combination of Hafner and Vogel. Accordingly, withdrawal of the Section 103 rejection is respectfully requested.

Conclusion

In view of the improper withdrawal of the allowability of the claimed invention under MPEP § 706.04, the lack of *prima facie* case of obviousness, the many differences between the claimed invention and the cited references, and the unexpected advantages of the claimed invention, it is believed that this application clearly and patentably distinguishes over the combination of the cited references and is in proper condition for allowance. Accordingly, Appellants respectfully request that the Board allow claims 8, 13, 14, 16-18, 21-26 and 33-35 over the cited references.

Respectfully submitted,

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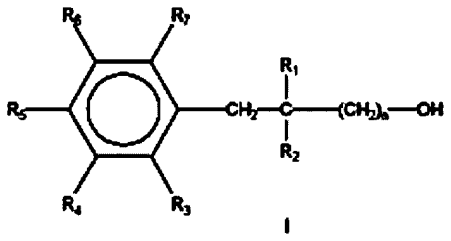
APPENDIX

8. Composition according to claim 14 which contains

ia) 0.01 to 10% by wt. of a compound of formula I, and

ib) 0.1 to 90% by wt. of a compound selected from C_1-C_6 alkyl alcohols, unsubstituted or substituted with a C_6-C_{12} aryl, aralkyl or aryloxy group, anionic cationic, amphoteric or nonionic surfactants, dimethylforom-amide, betaines and glycerine.

13. A compound according to formula I,



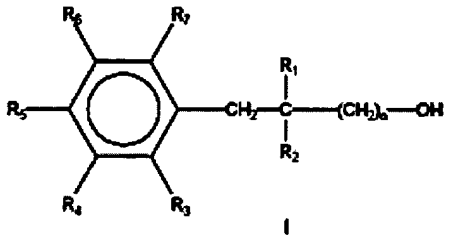
I

wherein R_1, R_3, R_5, R_6, and R_7 are hydrogen; R_2 is an ethyl group; R_4 is chlorine; and n is 1 or 2.

14. A disinfectant, antiseptic, antimycotic, deodorant or preservative comprising:

a compound selected from alcohols, surfactants and solvents; and

at least one compound according to formula I:



I

wherein,

R_1 is hydrogen or is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl;

R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1 or 2,

with the proviso, that

i) when R_1 and all groups R_3 through R_7 are hydrogen, then

n = 2;

ii) when R_1 and R_2 are C_1-C_6 alkyl and

a) all groups R_3 to R_7 are hydrogen, or

b) R_5 is methyl, methoxy or chloride, and all other groups R_3,

R_4, R_6 and R_7 are hydrogen,

then n =2;

iii) when R_1, R_2 and R_4 are methyl and all groups R_3 and R_5 through R_7 are hydrogen, then n =2;

iv) when R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n = 2;

v) when R_1, R_3, R_6 and R_7 are hydrogen, R_2 is methyl, and R_4 and/or R_5 are hydrogen or C_1-C_6 alkyl, then n = 2;

vi) when R_1 and R_4 through R_7 are hydrogen, R_2 is methyl or ethyl, and R_3 is methyl or methoxy, then n = 2;

vii) when R_1, R_3, R_5 and R_7 are hydrogen, R_2 is methyl, R_4 and R_6 are methyl or R_4 is hydrogen and R_6 is methyl, then n = 2; and

viii) when R_1 is hydrogen, R_2 is butyl, R_3 and R_5 are chloride, and all other groups R_4, R_6 and R_7 are hydrogen, then n = 2.

16. A composition according to claim 14, wherein said compound according to formula I is present in an amount of about 0.01 to about 10% by weight.

17. A composition according to claim 14, wherein said compound according to formula I is present in an amount of about 0.05 to about 8% by weight.

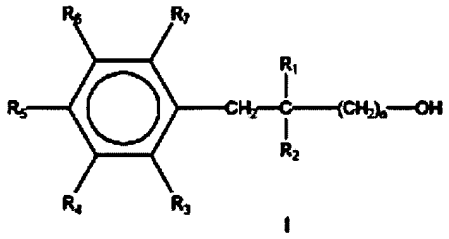
18. A composition according to claim 14, wherein said compound according to formula I is present in an amount of about 0.1 to about 5% by weight.

21. A shampoo or shower gel containing a preservative comprising:

a compound selected from alcohols, surfactants and solvents;

a re-fatting agent; and

a compound according to formula I:



I

wherein,

R_1 is hydrogen or is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl;

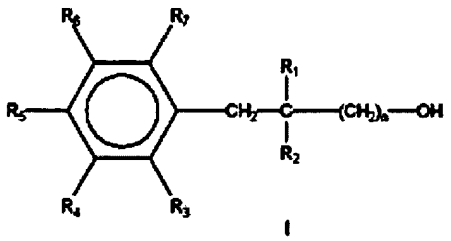
R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1 or 2, with the proviso that when R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n = 2.

22. A method of disinfecting a surface comprising the step of applying a disinfectant to said surface, said disinfectant comprising:

a compound selected from alcohols, surfactants and solvents; and

a compound according to formula I:



I

wherein,

R_1 is hydrogen or is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl;

R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

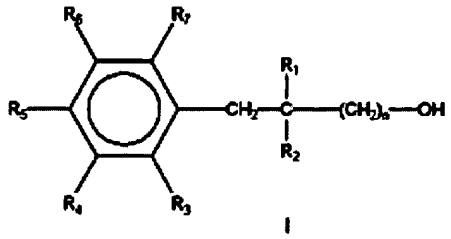
each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1 or 2, with the proviso that when R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n = 2.

23. A method according to claim 22, wherein said surface is skin, a mucous membrane, or a surgical glove.

24. A method of deodorizing a surface comprising the step of applying a disinfectant to said surface, said deodorant comprising:

a compound selected from alcohols, surfactants and solvents; and

a compound according to formula I:



I

wherein,

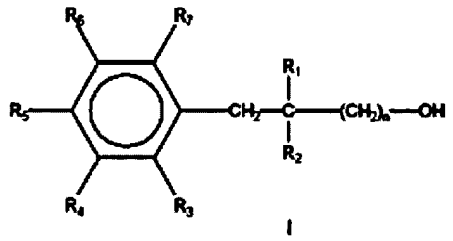
R_1 is hydrogen or is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl;

R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1 or 2, with the proviso that when R_1 and all groups R_3, R_4, R_6 and R_7 are hydrogen and R_5 is methyl, isopropyl, tert-butyl, or methoxy, then n = 2.

25. A method according to claim 24, wherein said surface is skin.

26. Process for the production of a compound of formula I:



I

wherein,

R_1 is hydrogen;

R_2 is selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl; and

each of R_3 to R_7 independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from C_1-C_8 alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms, C_2-C_8 alkenyl and C_3-C_8 alkynyl, optionally attached to the aromatic ring by –S- or –0-, and n is 1;

said process comprising the steps of:

a) monoalkylating a malonic acid dialkyl ester to introduce the group R_2;

b) dialkylating the monoalkylated malonic acid alkyl ester with a benzyl halide optionally substituted at the aromatic ring to introduce the groups R_3 through R_7 which are other than hydrogen;

c) saponifying and decarboxylating the dialkylated malonic acid dialkyl ester to form a corresponding 3-aryl-substituted propionic acid, and

d) reducing the 3-aryl-substituted propionic acid to form a desired alcohol of formula I.

33. A disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein R_3 and R_5 to R_7 are hydrogen, R_4 is chlorine, R_1 is hydrogen, R_2 is ethyl and n is 1

34. A disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein R_4 to R_7 are hydrogen, R_3 is chlorine, R_1 is hydrogen, R_2 is ethyl and n is 1.

35. A disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein R_3, R_4, R_6 and R_7 are hydrogen, R_5 is chlorine, R_1 is hydrogen, R_2 is ethyl and n is 1.